3 THREATENED, ENDANGERED, AND OTHER SPECIAL STATUS SPECIES

In this section, threatened, endangered, and other special status species are discussed pursuant to the federal Endangered Species Act and other federal and state regulations listing protected species. This evaluation relied on a review of site surveys, research, and monitoring reports; other environmental documentation; and documentation of formal consultations with regulators. An SA for ecology, including vegetation, fish, and wildlife, is included in Chapter 2.

3.1 THE 1992 EIS/EIR ASSESSMENT

The 1992 EIS/EIR (DOE 1992) included the results of consultation with the U.S. Fish and Wildlife Service (FWS) regarding federally listed species. The FWS identified 2 endangered and 12 candidate species that potentially could occur at the Livermore site plus Sandia National Laboratories (SNL) Livermore, as well as 2 endangered, 1 threatened, and 13 candidate species that could potentially occur at Site 300. The actual presence of federal- and state-listed species was established by surveys from 1986 to 1991.

At the time the 1992 EIS/EIR was prepared, no threatened, endangered, or other listed species were documented to occur on the Livermore site.

At the time the 1992 EIS/EIR was prepared, 16 federally listed and state listed species or their habitats were known to occur at Site 300.

Threatened, Endangered, and Other Special Status Species

- 1992 EIS/EIR: Special status species were identified for Site 300, but none were found at the Livermore site. Mitigation measures were specified to protect species and habitats.
- 1992–1997: The federal status of several species changed. Additional species and habitat were identified at Site 300. Federal-listed and state-listed species were identified at the Livermore site, and mitigation measures for the California red-legged frog and the white-tailed kite were developed after consultation with appropriate agencies.
- 1998–2002: Consultation with the FWS regarding the California red-legged frog at the Livermore site was completed in 1998. Impacts at the Livermore site would be mitigated as specified in the 1998 Biological Opinion from the FWS. Projected impacts of activities at Site 300 would continue to be subject to the mitigation measures described in the 1992 EIS/EIR. Supplementation of the EIS/EIR for species-related issues is not needed.

Listed below with their 1992 status, they are:

- One species of plant (large-flowered fiddleneck, federal- and state-endangered);
- Habitat for one species of insect (valley elderberry longhorn beetle, federal-threatened);
- Potential habitat for four species of fairy shrimp (federal candidates);
- Two species of amphibians (California tiger salamander and California red-legged frog, both federal candidates and state species of special concern);
- Two species of reptiles (Alameda whipsnake, federal candidate and state threatened species; California horned lizard, state species of special concern);
- Three species of birds (golden eagle, federal and state species of special concern; burrowing owl, state species of special concern; tricolored blackbird, federal candidate);
- Potential habitat for one species of mammal (San Joaquin kit fox, federal-endangered); and
- Two species of mammals (San Joaquin pocket mouse, formerly a federal candidate; American badger, state species of special concern).

For the description of the baseline affected environment in the 1992 EIS/EIR, Site 300 maintenance activities and existing operations were assessed for their impact on these and several additional species (Pacific western big-eared bat, great western mastiff bat, short-eared owl, black-shouldered kite [now called the white-tailed kite], and northern harrier). Maintenance activities considered were continued controlled burning, protection from grazing, ground squirrel poisoning, disking of roadways and firebreaks, explosives testing, surface impoundment maintenance, sewage lagoon maintenance, and all maintenance-related vehicle traffic.

Implementation of the 1992 proposed action at Site 300 included the disturbance of 2.4 acres of upland habitat with the potential to impact the California horned lizard, burrowing owl, San Joaquin pocket mouse, American badger, and potential kit fox habitat (kit foxes are not known to occur at Site 300 but are located nearby). Mitigation measures were recommended to protect sensitive species from activities that might inadvertently affect them. These mitigation measures related to (1) enhancing employee awareness of the need for protection and protective measures, (2) coordinating with the FWS, (3) modifying current operational practices, and

(4) implementing measures for protecting individuals and habitats. Additional mitigation measures were recommended if dens of kit foxes are found.

3.2 CHANGES FROM 1992 TO 1997

Since the 1992 EIS/EIR was published, the FWS has changed the status of several species. Among those changes, the California red-legged frog and the Alameda whipsnake have been listed as federal threatened species.

In 1994 and 1995, special status species were observed for the first time at the Livermore site. These species included the double-crested cormorant (migrant, state species of special concern), ferruginous hawk (migrant, federal candidate and state species of special concern), and western burrowing owl (resident, state species of special concern). The California red-legged frog, formerly observed only at Site 300, was found on the Livermore site in Arroyo Las Positas in July 1997. In 1994, 1995, 1997, and 1998, white-tailed kites (state protected species) nested successfully at the Livermore site. The number of nests increased from one to six. In 1995, 1996, and 1997, burrowing owls resided in the security buffer area at the northern and western boundaries of the Livermore site.

Discovery of California red-legged frogs and nesting white-tailed kites at the Livermore site prompted the development of protection and mitigation measures for maintenance activities in Arroyo Las Positas and for construction and operation of the NIF (Woollett 1997; DOE 1997a). These measures are designed to protect the frog's habitat, minimize project-related impacts, and control the amount of disturbance in the areas of the kite nests from construction and traffic.

The Mitigation, Monitoring and Reporting Program for the EIR and the Mitigation Action Plan for the EIS were developed to implement the 1992 EIS/EIR mitigation measures, requirements, and responsibilities. Annual monitoring reports updated mitigation requirements and described the progress achieved in their implementation. In 1992, a research project was initiated by the LLNL Environmental Protection Department to reintroduce the large-flowered fiddleneck (federal and state endangered) to appropriate habitat at Site 300 (LLNL 1994b). In 1993, agreements and cooperative ventures with the FWS's Natural Heritage Division were developed to establish new populations of large-flowered fiddleneck (LLNL 1995b). New locations of the blue elderberry bush — habitat of the valley elderberry longhorn beetle — were found and mapped. Surveys of Site 300 for fairy shrimp discovered only California linderella (a species that is not listed as threatened or endangered) in three seasonal temporary pools.

In 1994 and 1995, additional special status species were observed at Site 300 (LLNL 1997c). These species included Swainson's hawk (migrant, state threatened), merlin (migrant, state species of special concern), long-eared owl (resident, state species of special concern), and western spadefoot toad (resident, state species of special concern). No active kit fox dens were

found, but 11 potential dens were identified. Additional plant species were also found at Site 300, including the diamond-petaled poppy (potential state endangered species) and the gypsum-loving larkspur and big tarplant (both listed by the California Native Plant Society). Locations of these plants and animals were mapped and are being protected appropriately or mitigated.

All activities at Site 300 continued to operate with insignificant impacts to these species because of the application of mitigation measures developed from the 1992 EIS/EIR.

3.3 ANALYSIS OF PROJECTED CHANGES FROM 1998 TO 2002

In December 1997, DOE prepared an SA for the Stockpile Stewardship and Management PEIS (DOE 1997a) related to a proposal to provide additional access from Greenville Road to the Kirschbaum Field NIF construction laydown area at the Livermore site. This new access would cross the stormwater drainage channel above (well south of) its confluence with Arroyo Las Positas. The SA concluded that the proposal was not likely to adversely affect the breeding habitat of the California red-legged frog or nests of the white-tailed kite. Mitigation measures were proposed to further reduce or avoid the likelihood of impacts to these species.

In 1997, LLNL proposed to implement a maintenance project to remove and prevent further development of accumulated debris in the Arroyo Las Positas channel. A draft DOE *Environmental Assessment for the Arroyo Las Positas Maintenance Project at Lawrence Livermore National Laboratory* is in review. In parallel with preparation of the EA, DOE prepared a biological assessment (BA) as required by Section 7(a)(2) of the Endangered Species Act. This BA was forwarded to the FWS in August 1997, and the FWS issued a Biological Opinion (BO) in October 1997 (FWS 1997). Since the scope of the project has recently been revised, DOE has prepared an amended BA that was submitted to FWS on June 26, 1998. The amended BA identified potential impacts to the California red-legged frog and proposes mitigation measures. In August 1998, FWS issued a revised BO that contained required mitigation measures, including actions to avoid damage to individual frogs, protect and enhance habitat, and provide off-site compensation for incidental take of individual frogs (FWS 1998).

The mitigation and protective measures developed on a project-by-project basis from 1992 to 1997 to protect the white-tailed kite would continue to apply to new proposals and projects for the Livermore site from 1998 to 2002. In addition, the Site 300 mitigation procedure specifying avoidance of resident burrowing owls has also been applied to the Livermore site. Each of the actions identified in Table 1.1 would be subject to (1) the biological review of proposed actions or areas of disturbance and (2) the application of appropriate mitigation measures developed from the 1992 EIS/EIR or developed as refinements to them.

Threatened, endangered, or sensitive species were thought to be absent from the Livermore site in 1992. The recent identification of such species there has resulted in the

application of or development of refinements to mitigation measures originally identified in the 1992 EIS/EIR. Potential impacts have been and will continue to be avoided by (1) enhancing employee awareness, (2) continuing consultation with the FWS and the state when required, (3) modifying current operational practices when needed, and (4) protecting individuals of protected species and their habitats.

Proposed key programs and actions at Site 300 (Table 1.1) will continue to be accomplished within the constraints of the mitigation measures derived from the 1992 EIS/EIR. These measures were designed to avoid impacts where possible and reduce those impacts that cannot be avoided. Mitigation measures generally include (1) enhancing employee awareness, (2) consulting with the FWS and the state, (3) modifying current operational practices when needed, and (4) protecting individuals and habitats of protected species. The potential for presence of the kit fox at Site 300 will continue to be monitored, and potential dens will be avoided.

3.4 CONCLUSIONS

During the period 1998 to 2002, actions that will be implemented at LLNL, including new or modified key actions listed in Table 1.1, will be subject to the application of appropriate mitigation measures. If new sensitive species or habitats are identified, this information will be considered so that any needed additional levels of protection from inadvertent impacts and mitigation for unavoidable impacts can be developed early in the planning process. For these reasons, the 1992 EIS/EIR and its past and current mitigation measure commitments, including refinements, remain adequate to properly protect threatened, endangered, or special status species. Therefore, no supplementation of the 1992 EIS/EIR is needed at this time for species-related issues.

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